

SINTEF Technical Approval

TG 20569



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Amended:
Valid until: 01.04.2028
Provided listed on
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SINTEF confirms that

DAFA Radonsperre and accessories

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document



1. Holder of the approval

DAFA A/S
Holmstruppgårdvej 12
DK-8220 Brabrand
Denmark

2. Product description

DAFA Radonsperre is a roll product of unarmed polyethylene foil. The colour is black. The membrane is jointed with DAFA UV Tape and DAFA Butyl Tape.

Table 1
Dimension and tolerances for DAFA Radonsperre
According to EN 1848-2 and 1849-2

Designation	Value	
Thickness	0,55 mm	-0 / +10 %
Weight	0,465 kg/m ²	-0 / +10 %
Width of membrane	1,5 m ± 2 %	4 m ± 2 %
Roll length	20 m ± 0,9 %	

As supplementary components to the radon membrane, the following are supplied:

- DAFA Butyl Tape
- DAFA UV Tape
- DAFA UV cable and pipe collars
- DAFA Radon corner
- DAFA Liquid Radon sealant
- DAFA Radon Flexible Molding
- DAFA Multi Sealing

Details about supplementary components to the radon membrane are listed in table 3.

3. Fields of application

DAFA Radonsperre can be used as protection against radon in application areas B and C as shown in SINTEF Building Research Design guide 520.706, provided that the conditions described in chapter 6 in this document are followed. Principal positioning of radon membranes are shown in figure 1.

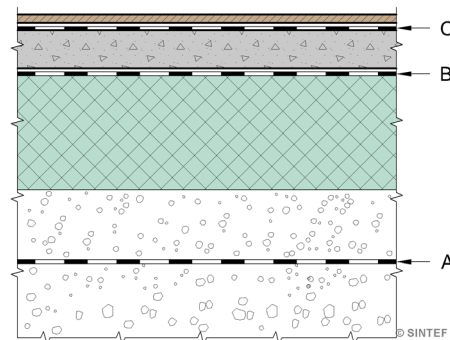


Fig. 1
Principal positioning of radon membranes in different application areas. DAFA Radonsperre can be used in application areas B and C.

4. Product performance

Material properties

Product characteristics for fresh material are shown in table 2.

Air tightness

DAFA Radonsperre is tested for performance in relation to air tightness for joints and details with satisfactory results as shown in table 2.

Properties related to fire

DAFA Radonsperre is not classified according to EN 13501-1.

Durability

The durability of DAFA Radonsperre is assessed as satisfactory when the product is used as specified in this Technical Approval.

SINTEF is the Norwegian member of European Organisation for Technical Assessment, EOTA, and European Union of Agrément, UEAtc

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Entreprise register: NO 919 303 808 MVA

Table 2
Product characteristics for DAFA Radonsperre

Property	Test method	Control limits ¹⁾	Unit
Radon transmission	SP-method 3873 ³⁾	$< 2 \cdot 10^{-8}$	m/s
Radon resistance		$\geq 5 \cdot 10^7$	s/m
Air tightness – construction ^{2), 4)}	NBI-method 167/01	1,5	l/min
Flexibility at low temperature	EN 495-5	- 30	°C
Dimensional stability	EN 1107-2	$\leq 1,0$	%
- longitudinally		$\leq 1,0$	%
- transverse			
Resistance to tearing	EN 12310-2	≥ 100	N
- longitudinally		≥ 120	N
- transverse			
Tensile strength	EN 12311-2 (B) ⁵⁾	≥ 600	N/50 mm
- longitudinally		≥ 500	N/50 mm
- transverse			
Elongiation	EN 12311-2 (B)	≥ 600	%
- longitudinally		≥ 700	%
- transverse			
Shear resistance of joints	EN 12317-2	100	N/50 mm
Water vapour transmission properties ²⁾	EN ISO 12572	$107 \cdot 10^{10}$ 210	m ² sPa/kg m ekv. airtlayer
Resistance to impact	EN 12691:2001 EN 12691 (A)	25	mm diameter
- Soft underlay - cylinder		-	mm height
- Hard underlay-12,7 mm bale			
Resistance to static loading	EN 12730 (A)	15	kg
- Soft underlay			

¹⁾ Control limit is the value the product must satisfy for internal control at the producer and for supervising control

²⁾ Result from type testing of 0,4 mm DAFA Radonsperre

³⁾ Test method from RISE Research Institute

⁴⁾ Calculated at a pressure difference of 30 Pa

⁵⁾ Tested according to method B but the results are given in N/50 mm

Table 3
Details about supplementary components to DAFA Radonsperre

Supplementary component	Material	Description	Dimensions
DAFA Butyl Tape	Butyl tape – double sided sealing material based on butyl rubber	For overlap joints	1,5 x 20 mm x 50 m
DAFA UV Tape	Single sided tape on UV-resistant foil liner	For overlap joints	60 mm x 25 m
DAFA UV cable and pipe collars	EPDM membrane with included DAFA UV Tape	Sealing of small penetrations	195 x 195 mm 260 x 260 mm 345 x 345 mm
DAFA Radon corner	LDPE, the same material as DAFA Radonsperre	For sealing corners	150 x 150 mm
DAFA Radon Liquid Radon Sealant	Sealing compound of hybrid polymer	For sealing pipes/cables in clusters	300 ml/600 tube/2,5 l
DAFA Radon Flexible Molding	PE foam with adhesive	Molding for sealing mass, for pipes/cables in clusters	20 x 25 x 950 mm
DAFA Multi Sealing	Elastic single-sided tape made of synthetic rubber	For complex details and repairs	1,5 x 50 mm 5 m/rl

5. Environmental aspects

Substances hazardous to health- and environment

DAFA Radonsperre contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT, and vPvB substances.

Effect on indoor environment

DAFA Radonsperre has been evaluated according to SINTEF Technical Approval – Health and Environmental Requirements, version 9.5.22. The product is evaluated not to emit particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health. The product meets the requirements in BREEAM-NOR v6.0, Emissions from building products in according to Hea 02 Indoor Air Quality.

Waste treatment/ recycling

DAFA Radonsperre shall be sorted as residual waste. The product shall be delivered to an authorized waste treatment plant for energy recovery.

Non-dried sealant or caulking material is defined as hazardous waste (according to the Norwegian Waste Regulation (Avfallsforskriften)). The products should be sorted as hazardous waste at the construction site and delivered to an authorized treatment plant for hazardous waste. In dry form, the products are not considered hazardous waste.

Environmental declaration

No environmental declaration (EPD) has been worked out for the product.

6. Conditions of use

Application area B (figure 2)

The membrane must be installed on a leveled surface of heat insulation which is secured against displacement.

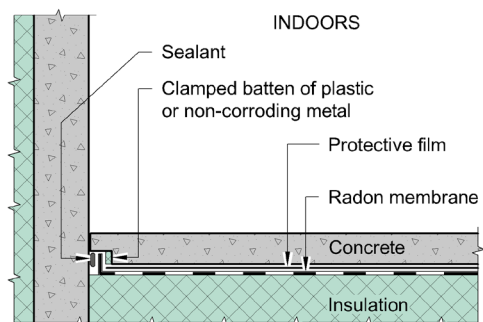
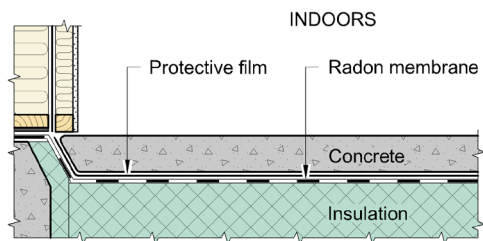


Fig. 2
Example of positioning of radon membrane in application area B. Slab on ground together with the foundation and concrete wall.

The top side of the membrane shall be protected with an antifriction and protective layer of minimum 0,2 mm thick plastic foil with mechanical properties and alkaline resistance corresponding to a radon membrane for use in application area C or a vapour barrier for floor installation with a SINTEF Technical Approval. The membrane shall be installed continuously over the top of the foundation to ensure airtight connections between the foundation and the floor.

Application area C (figure 3)

The membrane is placed on a leveled concrete slab or similar with clamped and glued (sealed) connections towards all construction parts and penetrations. The need to protect the membrane must be considered in each case.

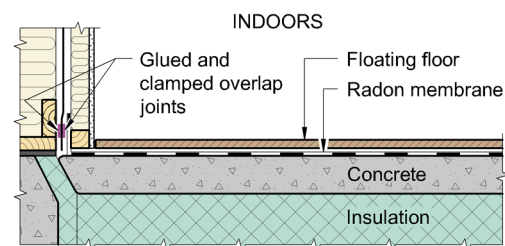
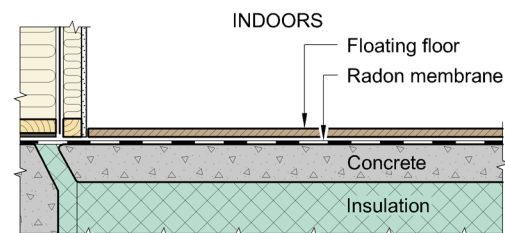


Fig. 3
Example of positioning of radon membrane in application area C. Slab on ground together with the foundation.

Installation

DAFA Radonsperre shall be joined with an overlap of at least 150 mm using DAFA UV Tape and DAFA Butyl Tape. The temperature during installation of DAFA UV Tape and DAFA Butyl Tape should be at least + 5 °C.

Cluster of pipe penetrations shall be sealed with DAFA Radon Liquid Radon Sealant poured into a casting frame made of DAFA Radon Flexible molding. Any need for replenishing of the sealant shall be monitored, especially for slow curing sealants.

Pipe penetrations should be sealed using DAFA UV cable and pipe collars. DAFA Multi Sealing can be used for complicated details and repairs.

For internal and external corners DAFA Radon corner shall be used along with DAFA UV tape and DAFA Butyl tape.

It must be checked that all joints, penetrations and transitions between floor and wall are airtight and have not opened as a result of loads and stresses during the construction period before the membrane is built in.

The design shall ensure that all joints, penetrations and transitions between floor and wall are airtight. The design should be according to the principles shown in SINTEF Building Research Design Guide 520.706 and 701.706.

Floor heating

Heating cables shall not be placed directly on the membrane, and there shall be a minimum of 5 mm non-combustible material between the heating cables and the membrane.

Underlay and protection

It is important to avoid damaging the radon membrane with sharp objects or objects that are being trampled down in the membrane during the construction period. After installation, the membrane shall not be locked for movement or span over cavities as this can cause the membrane or its joints to tear when exposed to loads or shrinkage. Reinforcement chairs or fasteners for floor heating that may damage the membrane shall not be used.

Radon membrane as vapour barrier

Radon membrane in application areas B and C will replace the plastic membrane as vapour barrier, because the radon membrane will work both as vapour barrier and radon membrane. The plastic membrane with function as protection must still be used as described.

Storage

DAFA Radonsperre shall be stored dry and protected against direct UV-radiation before use.

7. Product and factory production control

DAFA Radonsperre is produced in Finland for DAFA AS.

The holder of the approval is responsible for the factory production control in order to ensure that DAFA Radonsperre is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product(s) and the manufacturer's system for factory production control (FPC) is subject to continuous surveillance in accordance with the contract regarding SINTEF Technical Approval.

The manufacturer has a quality system which is certified according to EN ISO 9001 and an environmental managing system certified according to EN ISO 14001.

8. Basis for the approval

The evaluation of DAFA Radonsperre is based on reports owned by the holder of the approval.

The evaluation of design and technical solutions are based on recommendations given in SINTEF Building Research Design Guides.

9. Marking

All rolls shall be marked with name of manufacturer, product description and manufacturing date.

The approval mark for SINTEF Technical Approval TG 20569 may also be used.

10. Liability

The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF



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Godkjenningsleder